EPA Environmental Technology Partnerships

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Cooperative Research and Development Agreement With Dow Corning

Environmental Damage to Coatings and Sealants

Participants

This Cooperative Research and Development Agreement (CRADA) brings together Dow Corning, a Michigan Corporation, and the U.S. Environmental Protection Agency's (EPA) Atmospheric Research and Exposure Assessment Laboratory (AREAL) in the Office of Modeling, Monitoring Systems and Quality Assurance, Office of Research and Development.

Purpose

This CRADA was developed for AREAL to use its facilities and resources, and the resources provided by Dow Corning to examine how the environment affects Dow Corning coatings and sealants.

Background

A unique environmental chamber developed by AREAL was used to simulate damage to these products resulting from environmental exposure. The Chamber generated complex chemical air mixtures, simulating those effecting Dow Corning products when exposed outdoors. Substantial research has been sponsored and performed by AREAL with respect to assessing resistance of materials and material coatings to atmospheric damage.

AREAL, which has expertise in the field of air, toxics and pollution prevention, conducts intramural and extramural research related to the collection and characterization of air pollutants; the determination of air pollutant trends and patterns; and the assessment of human and ecosystem exposures to air pollutants.

Results

The weathering properties of five coatings were investigated. This data was used by Dow Corning to determine whether coating formulations required further modifications to improve field performance. In addition, the results provided EPA with important data concerning how atmospheric pollution contributes to the degradation of coatings.

This is one of more than 50 cooperative research and development agreements EPA has with various U.S. businesses, consortiums, trade associations, academic institutions and state and local governments under the Federal Technology Transfer Act of 1986. These agreements serve as a mechanism for EPA to work with private industry to develop new pollution prevention and control technologies and efficiently bring them into the marketplace.

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